

# THE MYCOPHILE

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## PRESIDENT'S MESSAGE By Bob Fulgency

One of the prominent benefits that NAMA offers its members is the opportunity to attend the annual foray. This event is always located in one of the many picturesque natural settings in North America. There foray members can attend a wide variety of interesting lectures delivered by professional mycologists or highly knowledgeable amateurs. In addition, members get to choose from among a number of quality sites to forage with fellow mushroomers.

To initiate a foray, The Foray Committee identifies a host club--hopefully one year or two years in advance--willing to take on the event. Next, the Board of Trustees must approve the foray at a subsequent annual meeting. Once approved, most if not all the preparations and organizational details--facilities, pre- and post-foray workshops, foray trails, presenters and lecturers and other matters--are handled by the club, with occasional guidance from the Foray Committee. It is no small undertaking on the part of a club to sponsor a national foray; it requires the countless hours of work of many club members to tackle the myriad details. On those occasions when a host club is not available, the Foray Committee itself organizes and directs the foray.

To assist in the undertaking, NAMA has created a Foray Guide, listing many of the requirements the host club must meet in connection with the foray. Although it is comprehensive, it has been updated from time to time, based on the experiences of past foray managers.

Noah Siegel, the new Chairman of the Foray Committee, and Christian Schwarz will be overseeing this year's annual foray in December in Scotts Valley, California. Noah has chosen Allein Stanley, Ann Bornstein, Linnea Gillman, John Plischke and Patrice Benson to be members of his committee. Each of them has a broad familiarity with NAMA and its forays. Ann and Allein have been involved in foray management for many years. Linnea managed the 2010 foray in Colorado, and John and his wife Becky directed the foray last year in Pennsylvania. Patrice will be handling the planned 2014 foray in Port Townsend, Washington. (The site of the 2013 foray has yet to be selected).

In addition to the National Foray, NAMA has scheduled Regional Forays this year. It will be the long established and always popular Wildacres Foray in North Carolina. As noted in the January/February issue of this newsletter, this is the 15th Wildacres Foray and it is scheduled for September 20th through the 25th. Allein Stanley will once again be guiding the foray. The Southwest Regional Foray, meanwhile, scheduled to be held at the Southwest Research Station in the Chiricahua Mountains near Portal, Arizona on August 31st through September 3<sup>rd</sup> has been cancelled because the foray's mycologists reluctantly determined that the habitat has not adequately recovered from last year's forest fires and as a consequence would not produce many mushrooms at the higher elevations. This foray was also postponed last year because of widespread forest fires in the area.

If you have yet to attend a NAMA Foray I encourage you to do so; you will have a terrific time, making new friends and expanding your knowledge of mycology and related fields.

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# 2012 FORAYS AND ANNOUNCEMENTS

**July 28-29: FIRST ANNUAL JOINT APPALACHIAN FORAY**, Canaan Valley Resort, Canaan Valley, WV with Gary Lincoff, Bill Roody and Donna Mitchell. [www.wvmushroomclub.org](http://www.wvmushroomclub.org)

**August 2 - 5: The NEMF 36th ANNUAL SAM RISTICH FORAY** at East Stroudsburg, PA. [www.nemf2012.org](http://www.nemf2012.org) [Registration.htm](#) for further information.

**August 16 - 19: THE TELLURIDE MUSHROOM FESTIVAL.** [www.shroomfest.com](http://www.shroomfest.com)

**August 23 - 26: NMMS/4cmc FORAY** in Pagosa Springs, Colorado. NMMS & 4cmc welcome and encourage NAMA members to visit southern Colorado and enjoy the company and tutelage of our Foray Mycologists Steve Trudell and Britt Bunyard. Field trips will take us into the San Juan Mountains, where we'll visit elevations from 7500 ft to over 11,000. Foray Fee of \$100 includes meals but not lodging. Visit [www.mycowest.org](http://www.mycowest.org) for details and registration form.

**September 13 - 16: COMA FORAY** in Hebron, CT with Chief Mycologist Gary Lincoff, Dr. Roz Lowen, John Plischke III and Bill Yule. Go to [www.comafungi.org](http://www.comafungi.org) for a registration form.

**Sept. 20 - 23: NAMA WILDACRES REGIONAL FORAY** Price is \$225 per person. Contact registrar Glenda O'Neil at [glendakoneal@yahoo.com](mailto:glendakoneal@yahoo.com) or at 423-246-1882 and see website [www.namyco.org/events/index.html](http://www.namyco.org/events/index.html).

**Sept. 22: The GARY LINCOFF MID-ATLANTIC MUSHROOM FORAY.** The headquarters for this popular one-day foray will be at Rose Barn in Allegheny County's North Park, just north of Pittsburgh, PA. We are again fortunate to have Gary Lincoff as our principal mycologist. The other mycologists presenting programs are Rod Tulloss and Bill Russell. Rod Tulloss is a world expert on the genus Amanita. Bill Russell has a wealth of knowledge about mushrooms of Pennsylvania. Our own John Plischke III has agreed to lead the invited mycologists and club mycologists/identifiers in classifying all the mushrooms we find on the guided walks. There will be guided morning walks and afternoon speakers & cooking demonstration. The club's mushroom feast in the late afternoon is always a highlight of the foray. Last year, 16 club members prepared 31 amazing mushroom dishes for the feast. More details can be found on the website. <http://wpamushroomclub.org>

**Sept. 28-30: Foray Newfoundland and Labrador** in beautiful Terra Nova National Park. Information and registration forms are on their website [www.nlmushrooms.ca](http://www.nlmushrooms.ca).

**October 21 - November 4: Foray to Ambruzzo-Molise region of Italy.**

**November 3-18 Foray to the island of Sardinia.** In addition to these two forays to Italy, we discover and sample the cultural offerings and the cuisine of the regions. For information contact Albert Casiero at [casciero@wrlc.org](mailto:casciero@wrlc.org)

**Dec. 13-16: NAMA 52nd ANNUAL FORAY** at Mission Springs in Scott's Valley, California. Guest mycologists include Chief Mycologist Dr. Else C. Vellinga, David Arora and others. <http://namyco.org/events/NAMA2012/index2012.html>

**MYCOLOGY WORKSHOPS AT EAGLE HILL, ME 2012:** For information about scholarships go to <http://www.eaglehill.us>.

**Jul 29 - Aug 4: Mushroom Identification for New Mycophiles - Foraging for Edible and Medicinal Mushrooms** with Greg A. Marley and Michaeline Mulvey

**Aug 5 - 11: Natural History of Fungi and Slime Molds** with Steven L. Stephenson

**Aug 19 - 25: Coastal Maine Mushrooms and Microscopes Foray** with Rosalind Lowen and Dianna Smith



## Calling all Mycophiles:

### The 2012 NAMA Annual Foray is on its way!

It'll be held in Scotts Valley, Santa Cruz County, at the northern edge of the beautiful and scenic Monterey Bay.

We were lucky enough to have found an outstanding conference center located very near some of California's most unique and productive mushroom habitats. Just a stone's throw from the endemic-rich Zayante Sandhills, old-growth Coast Redwood groves (the Kingdom of Waxcaps), as well as live oak woodlands and Douglas-Fir forests, rich in mycorrhizal fungi, fascinating wood rotters, and saprobes dwelling in the leaf mulch.



Carl Atilano with a nice bunch of  
*Tricholoma flavovirens*. Aptos, Santa Cruz County

Luckier still, we have negotiated unprecedented collecting access to some choice California State Parks, including Wilder Ranch, Big Basin Redwoods, The Forest of Nisene Marks, as well as the amazing UCSC Campus, which has hosted a continuous history of mycophiles since David Arora was a student there in the 70's.

The faculty for this foray is exceptional, with representatives from around the nation: UC Berkeley's Dr. Else Vellinga will be our head mycologist - she is one of the most active mushroom taxonomists in the United States, and will be an invaluable asset in compiling our species list. David Arora will be our special guest mycologist, bringing decades of taxonomic experience to the table, as well as mushroom stories from around the world. Dr. Rick Kerrigan is a UC Santa Cruz alumnus, and he'll share his extensive knowledge of the genus *Agaricus* with us. Dr. Dennis Desjardin will contribute his expertise (sure to add a few obscure marasmioid fungi to our total!) and will speak about the fascinating phenomenon of fungal bioluminescence. Dr. Jim Trappe will shed light on the world of hypogeous fungi, a group that many of us have scarcely spared a second thought for. Gary

Lincoff's decades of engagement in all thing fungal will round out our presentations. A dye workshop will be on offer as a pre-foray add-on, and will be taught by some of the most knowledgeable dyers from around the country (Dorothy Beebee, Alissa Allen, Sue Hopkins), using a wide variety of pigment-yielding mushrooms.



Waxcap Habitat, Cave Gulch, Wilder Ranch State Park

Santa Cruz County has a large community of experienced mushroom hunters, which will allow us to draw on a wealth of knowledge in our pursuit of a complete mycota for the County. We'll be putting a big emphasis on boosting the species list at our foray, with daily awards for rare and interesting finds, and a daily recap of the progress of our species list.

Our vouchered collections will be housed at the UCSC Museum of Natural History Collections, where they will be prioritized for microscopic examination and sequencing. So get your hand lens out and brush up on your taxonomy - we will undoubtedly encounter many rare fungi and first records for the county, and if we're really lucky, we might find a first state record! Who knows what lurks behind the next rotten log, or around the trunks of those towering redwoods?

Start planning now to make sure that you don't miss this event. Registration has been open for a while now, and we are expecting to sell out.

Good mushrooming!

Christian Schwarz

Minister of Science, Fungus Federation of Santa Cruz

**We are pleased to announce our NAMA 2012 pre-foray workshop:**

### **MUSHROOM DYES OF NORTH AMERICA**

Join North America's premier mushroom dye experts Dorothy Beebee, Susan Hopkins and Alissa Allen for an all-day mushroom dye workshop. North America's best assortment of dye fungi will be showcased in this spectacular once in a lifetime opportunity. In this hands-on workshop, you will learn about identifying, preserving and extracting permanent colorfast pigments from different wild mushrooms as well as extracting pigments for making paints. Expect a rainbow of results, as only the best color producing fungi will be used.

Californian dyer extraordinaire Dorothy Beebee and her fellow dyers, north-east based Susan Hopkins and the Pacific Northwest's Alissa Allen, will lead you in dye experimentation to the discovery of pure colors as well as the effects minerals and pH have on color changes.

Join this full day workshop for only \$65. Lunch is included.

For those who are staying onsite we have two lodging options available; Economy Room, (two nights, six meals) and the dye class for only \$150 or Standard Room, (two nights, six meals) and the dye class for \$180. The foray preregistration form has details on the different types of lodging available.



# 2012 NAMA Photo Contest Entry Form Digital Only

Name:

Address:

Phone: Email:

**Entry Titles:** **Documentary** (images suitable for the fungus or myxomycete to be used in a guide book).  
**Judges Option** (pictures that don't fit into either of the other two categories. and/or people, humor, etc.).  
**Pictorial** (beautiful pictures of fungi or myxomycetes suitable for a calendar, poster, or coffee table book).

Your \$4 fee allows you to enter up to 15 digital images in the contest. Please enter the titles of your photos (or digital filenames) on the lines below.

Pictorial (Limited to 6 entries)

P - 1: P - 4:

P - 2: P - 5:

P - 3: P - 6:

Documentary (Limited to 6 entries)

D - 1: D - 4:

D - 2: D - 5:

D - 3: D - 6:

Judges' Option (Limited to 3 entries)

JO - 1:

JO - 2:

JO - 3:

Entry fee enclosed:  \$4.00 for digital contest

Digital images must be mailed on a CD or DVD and will not be returned. Mail images, entry form, and entry fee (check payable to "NAMA") to:

**John Plischke III - Digital**  
 411 Center Avenue  
 Greensburg, PA 15601  
 (724) 832-0271  
[fungi01@aol.com](mailto:fungi01@aol.com)

**Reproduction:** Entry in the contest constitutes the consent of the photographer to allow NAMA to reproduce copies of each winning entry (including Honorable mention etc.) for circulation by the Education Committee among the membership and affiliated societies. NAMA also reserves the right to post images of the winning images on the NAMA web pages, and in the Mycophile. All copyrights remain with the photographer.

**All Entries Must Be Received by Sept 4, 2012**

# 2012 Annual Photo Contest

## Eligibility

The contest is open to all paid-up NAMA members. Non-members may enter if a separate check for dues is enclosed (\$35) with the entry. Images that have previously won (including honorable mention) are not eligible. Closing date: All entries must be received by the Contest Director on or before **Sept 4 2012**. Allow at least one week for mailing.

## Subject material

For Pictorial and Documentary, organisms from the Myxomycota (slime molds) and the classes Basidiomycetes and Ascomycetes of the Eumycota ("true fungi") are eligible. For Judge's Option, nearly anything goes, so long as the theme relates to fungi, and fungi are a key element of the photograph.

## Entry Divisions

### Pictorial

This division is for single photos that illustrate the beauty and variety of fungi in form and color. The objective is a photo suitable for display or illustration in a fine book. Judging criteria include consideration of both technical (focus, depth of field, exposure, lighting, color, absence of distracting elements) and artistic (composition, color, background, lighting) aspects.

### Documentary

For single photographs especially suited as illustrations in a field guide or monograph, or for use in a lecture. Emphasis is placed on portrayal of key morphological characteristics such that the usefulness of the image as an identification aid is maximized. Subjects may be shot in the field, laboratory or studio and the photographer has complete freedom to process, manipulate, or orient the specimen in any desired manner to achieve the goal. Close-ups of single features and photomicrographs are acceptable. Judging criteria will be the same as in the Pictorial category but they will be of secondary importance to the overall mycological utility of the photo. Accurate identification of the subject will be a consideration.

### Judge's Option

For single photos or series which do not fit into the Pictorial or Documentary divisions. Examples include time-lapse series, ecological relationships of fungi (e.g. fairy rings), fungi with animals, people enjoying fungi.

## **Awards**

First, 2nd, and 3rd prizes will be awarded in Pictorial and Documentary in both classifications. Additional Honorable Mention awards are given at the judges' discretion up to a maximum of 15% of the entries in that particular category. For the Judges' Option division, up to 20% of the entries may be selected. Prizes such as books, etc. are awarded, depending on the contest director's resourcefulness and the generosity of donors.

## **Marking, Listing and Submitting Digitals**

What information do you want included in the digital photo's filename? If your computer program will permit, we like to have at least these 3 things in your filenames: D (for Documentary) JO (for Judges Option) or P (for Pictorial), and the photographer's initials in three spaces, followed by the Genus and species of the fungus or myxomycete if you can identify it, and your title for the photo, (unless it is the same as the previous) and, of course, the file extension. If you have enough space for your full name, the entry number, etc., or you wish to include other information, that is a bonus, but not required.

## **Entry Fee**

The entry fee for the digital contest is \$4.00.

## **Reproduction**

Entry in the contest constitutes the consent of the photographer to allow NAMA to reproduce copies of each winning image (including Honorable mention etc.) for circulation by the Education Committee among the membership and affiliated societies. NAMA also reserves the right to post images of the winning images on the NAMA web pages and in **The Mycophile**. All copyrights remain with the photographer.

To enter the NAMA photography contest, [download](#) and mail the entry form or contact:

**John Plischke III**  
411 Center Avenue  
Greensburg PA 15601  
(724) 832-0271  
Email: [fungi01@aol.com](mailto:fungi01@aol.com)





*Pycnoporus cinnabarinus*, a white-rot fungus, is used as a model organism for understanding the role of laccases in lignin degradation. Photo: D. Smith

## **Mycodigest: A Look at Fungal Laccases**

By Jennifer Kerekes

It is well known that fungi decompose plant matter. But, how do they do this? Fungi are able to decompose plant matter, such as lignin and cellulose, by releasing extracellular enzymes that degrade these polymers. Some fungi, such as most white-rot basidiomycete fungi, are capable of producing several types of extracellular enzymes, including lignin peroxidases, manganese peroxidases, and laccases. These enzymes allow the fungus to break down and utilize organic substrates as an energy and nutrient source (Osono, 2007). Lignin is a recalcitrant compound that provides strength and support to plant cells, bonds cellulose fibers, and makes the limited nitrogen in wood less available. In addition to lignin degradation, laccases also play an important role in soil organic matter cycling.

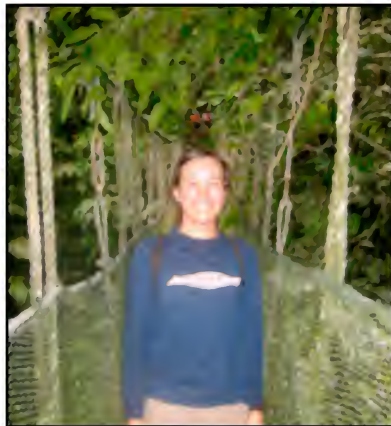
Laccases have been found in almost all wood decay fungi; however, *Phanerochaete chrysosporium*, a well studied white-rot basidiomycete, does not produce laccases, and likely breaks down lignin using a variety of peroxidases (Martinez et al. 2004; Larrondo et al. 2003; Hoegger et al. 2006). Litter-decomposers are also capable of producing extracellular enzymes, such as laccases and manganese peroxidases. However, litter-decomposers vary in their ability to decompose lignin in leaf litter. Basidiomycete genera such as *Clitocybe*, *Collybia*, *Marasmius*, and *Mycena* have been studied for their bleaching activity and enzyme production (Osono, 2007). Bleaching of leaf surfaces and humus is correlated with ligninolytic activity of fungi in that lignin content has been found to be lower in both bleached leaf surfaces and humus as compared to non-bleached surfaces.

Recently, there has been an interest in linking the relationship between fungal diversity and functional diversity. Researchers are interested in using molecular markers, such as laccase-encoding genes, as a proxy for functional diversity. Therefore, looking at laccase-encoding gene diversity would provide information regarding potential for litter degradation and soil organic matter cycling. Previous studies using molecular approaches have looked at the diversity and distribution of laccase genes from basidiomycetes. Luis et al. (2004) first described the Cu1F/Cu2R basidiomycete specific laccase primer

pair and identified a number of laccase genes from mycelial cultures and fruit-bodies. They also demonstrated that saprotrophic fungi have a greater diversity of laccase genes as compared to mycorrhizal fungi. In a follow-up study, they found that soil fungi with laccase genes occupied different niches and showed a vertical distribution in the soil profile with the greatest number of laccase genes found in the upper horizons (Luis et al., 2005). Understanding soil enzyme functional diversity could significantly increase our understanding of the linkages between resource availability, microbial community structure and function, and ecosystem processes (Caldwell, 2005).

Laccases are a multigene family, and some fungi, such as *Coprinopsis cinerea*, have as many as 17 different laccase genes (Kilaru, Hoegger, & Kües, 2006). It should also be noted that fungal laccases also appear to be involved in a variety of physiological functions, including fruit-body development, detoxification of phenolic compounds, pigment production, and antimicrobial activity (Levin, Forchiassin, & Ramos, 2002; Thurston, 1994). In addition, fungal laccases also appear to have roles in stress defense and fungal plant-pathogen/host interaction (Thurston, 1994).

Some ascomycetes, primarily xylariaceous fungi (Pointing et al., 2003), are capable of degrading lignin, though they are less capable than white-rot fungi. This was recently explored further in a study by Shary and colleagues (2007). There is also evidence that laccases, or laccase-like genes, are also present in bacteria. Less is known about the presence, diversity and function of these laccase-like genes in bacteria, compared with fungi (Kellner et al., 2008). However, fungal basidiomycete laccases are the primary ligninolytic enzymes in the environment and play a critical role in plant matter decomposition.



*Jennifer Kerekes is studying the ecology and diversity of saprotrophic fungal communities with Dr. Tom Bruns at the University of California, Berkeley.*

#### Literature Cited:

- Caldwell, B. (2005). Enzyme activities as a component of soil biodiversity: A review. *Pedobiologia*, 49(6), 637-644. doi:10.1016/j.pedobi.2005.06.003
- Edwards, I. P., Zak, D. R., Kellner, Harald, Eisenlord, S. D., & Pregitzer, K. S. (2011). Simulated atmospheric N deposition alters fungal community composition and suppresses ligninolytic gene expression in a northern hardwood forest. *PLoS one*, 6(6), e20421. doi:10.1371/journal.pone.0020421
- Eggert, C., Temp, U., & Eriksson, K.-E. L. (1997). Laccase is essential for lignin degradation by the white-rot fungus *Pycnoporus cinnabarinus*. *FEBS Letters*, 407(1), 89-92. Federation of European Biochemical Societies. doi:10.1016/S0014-5793(97)00301-3
- Hoegger, P. J., Kilaru, S., James, T. Y., Thacker, J. R., & Kües, U. (2006). Phylogenetic comparison and classification of laccase and related multicopper oxidase protein sequences. *The FEBS journal*, 273(10), 2308-26. doi:10.1111/j.1742-4658.2006.05247.x
- Kellner, Harald, Luis, Patricia, & Zimdars, B. (2008). Diversity of bacterial laccase-like multicopper oxidase genes in forest and grassland Cambisol soil samples. *Soil Biology*, 40, 638-648. doi:10.1016/j.soilbio.2007.09.013
- Kilaru, S., Hoegger, P. J., & Kües, U. (2006). The laccase multi-gene family in *Coprinopsis cinerea* has seventeen different members that divide into two distinct subfamilies. *Current genetics*, 50(1), 45-60. doi:10.1007/s00294-006-0074-1
- Larrondo, L., Salas, L., & Melo, F. (2003). A novel extracellular multicopper oxidase from *Phanerochaete chrysosporium* with ferroxidase activity. *Applied and environmental microbiology*, 69(10), 6257-6263. doi:10.1128/AEM.69.10.6257
- Levin, L., Forchiassin, F., & Ramos, a M. (2002). Copper induction of lignin-modifying enzymes in the white-rot fungus *Trametes trogii*. *Mycologia*, 94(3), 377-83. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/21156508>
- Luis, P., Walther, G., Kellner, H, Martin, F, & Buscot, F. (2004). Diversity of laccase genes from basidiomycetes in a forest soil. *Soil Biology and Biochemistry*, 36(7), 1025-1036. doi:10.1016/j.soilbio.2004.02.017
- Luis, Patricia, Kellner, Harald, Zimdars, B., Langer, U., & Martin, Francis. (2005). Patchiness and Spatial Distribution of Laccase Genes of and Unknown Basidiomycetes in the Upper Horizons of a Mixed Forest Cambisol. *Microbial ecology*, 50(4), 570-579. doi:10.1007/S00248-005-5047-2

Martinez, D., Larrondo, L. F., Putnam, N., Gelpke, M. D. S., Huang, K., Chapman, J., Helfenbein, K. G., et al. (2004). Genome sequence of the lignocellulose degrading fungus *Phanerochaete chrysosporium* strain RP78. *Nature biotechnology*, 22(6), 695-700. doi:10.1038/nbt967 Osono, T. (2007)

*This article first appeared in the April edition of MYCENA NEWS, the newsletter of the Mycological Society.*

## Relationship of *Hygrocybe vitellina* and *H. nitida* – Preliminary Report By David Boertmann



Because the original description of *Hygrocybe vitellina* by Fries<sup>1</sup> has been interpreted several ways, I reviewed the European interpretations of this and closely allied species<sup>2</sup>. By comparing collections of the different interpretations, I could assign these to several existing taxa. Orton's 1964 interpretation of *Hygrocybe vitellina*<sup>3</sup> seemed to fit best with the description of Fries. Other descriptions seem to fit best with the arctic/alpine species

*Hygrocybe citrinopallida* originally described from North America by Smith & Hesler.<sup>4</sup>

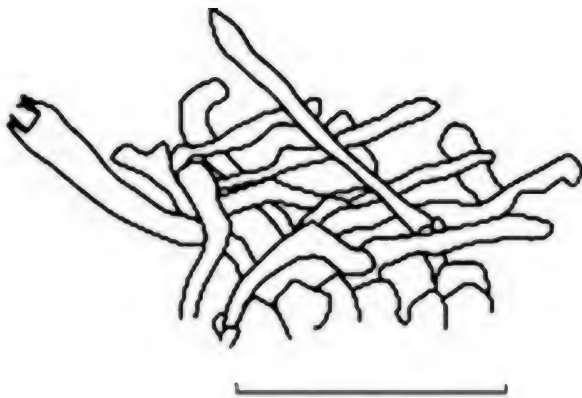
**Figure 1.** Collection of *Hygrocybe vitellina* from Denmark. Similar small fruitbodies have been found in Québec and Western Newfoundland in young specimens. Photo: Jens H. Petersen.



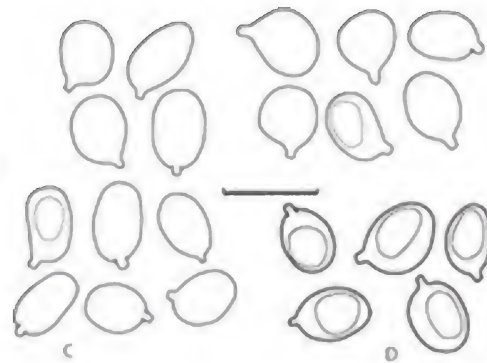
In the course of these studies I also referred briefly to the very similar North American species, *Hygrocybe nitida*, described by Berkeley and Curtis<sup>5</sup>. This species is thought to be slightly larger, with more oblong spores than *H. vitellina*. However, intermediate collections are frequent and overlapping spore shapes have been described.<sup>2</sup> Because I had not studied enough North American *H. nitida* in detail, I preferred to consider the two as separate species for the time being.

**Figure 2.** Detail of photo to show mucus on sterile gill edge on the left. Photo: Renée Lebeuf.

In an effort to investigate the relationship of these two species further, 10 collections of North American *H. nitida/vitellina*\* were sent to me from the fungaria of Foray Newfoundland & Labrador (FNL; 6 collections), Andrus Voitk (3 collections), and le Circle des Mycologues de Montréal (CMM; 1 collection). Examination of these samples, with comparison to European collections showed that the two species were identical both micro- and macroscopically. The photograph in Figure 2 shows a collection from Québec, and the photo in Figure 1, shows one with very small fruitbodies from Denmark. The features to note are that both cap and stem are viscid, and, as well illustrated in Figure 2, there is mucus on the gill edge (a sterile gill margin). Line drawing of the gill edge from a Newfoundland collection is shown in Figure 3, and of spores from two Newfoundland collections and two from Europe are illustrated in Figure 4.



**Figure 3.** Gill edge preparation from a Newfoundland collection (13 Sept. 2004) with the gelatinised edge cells above. Note single basidium. In old fruitbodies the sterile, gelatinised edge is sometimes almost entirely replaced by fertile tissue.



**Figure 4.** Spores from two European collections (A/ from Wales 8 Sept. 1989 (K), B/ from Denmark, DB 2001/41) and from two Newfoundland collections (C/ 12 Sept. 2009, D/ 13 Sept. 2004).

Thus, by morphologic criteria the two seem to be conspecific (the same species). However, because they have lived continents apart without genetic intermingling for a long time, each may have evolved slightly differently. In that case, DNA studies should show small genetic differences. These studies are underway.

A similar species *H. chromolimonea* is known from Australia and New Zealand, and it is most likely part of the same complex, if not conspecific with the North American and European species. Finally, if this interpretation of Fries' description is not acceptable because Fries and the earlier mycologists did not describe the sterile gill edges, then the taxon should be considered *H. luteolaeta*. This was applied in 1985 to a Dutch collection of the same fungus by Arnolds, who was the first to note the viscid gill edge, a feature overlooked by all previous mycologists who studied *H. vitellina/nitida*.<sup>6</sup>

\*Because the single morphological differentiator between the two species, spore shape, had been noted to overlap for both species, Yves Lamoureux considered them synonymous. This led the CMM to use the earlier epithet, *H. vitellina*, for the North American species. Noting Lamoureux' reasoning, a similar decision was made by FNL. Thus, the North American material sent to Boertmann was labelled *H. vitellina*, but would have been considered *H. nitida* by most North American authorities. *Ed.*

## References

- Fries E: Monographia Hymenomycetum Sueciae Vol II. CA Leffler. Upsaliae. 1863.  
Boertmann D: The identity of *Hygrocybe vitellina* and related species. Nord J Bot. 10:311-317. 1990.  
Orton PD: Notes on British Agarics II. Not Royal Bot Gardens Edinb. 26:43-63. 1964.  
Smith AH, Hesler LR: Additional North American *Hygrophori*. Sydowia 8: 304-333. 1954.  
Berkley MJ, Curtis MA: Centuries of North American Fungi. Ann. mag. nat. hist. II: 417-435. 1916.  
Arnolds E: Notes on *Hygrophorus* – IV. Persoonia 12: 475-478. 1985.

*Editor: This and the following article first appeared in OMPHALINA, the newsletter of Foray Newfoundland and Labrador, edited by Andrus Voitk.*

Update on

# *Hygrocybe nitida*

By David Boertmann

In 2009 I redefined the concept of European *H. vitellina* and in 2011, at the request of Andrus Voitk and Renée Lebeuf, compared it with North American *H. nitida*, collected in Newfoundland and Québec. Although the American taxon had been described to be somewhat bigger and have slightly bigger and more oblong spores, comparison of these with European collections revealed that collections from both continents had so many intervening forms, that a consistent morphologic difference could not be claimed. Therefore, by classical criteria they should have been considered the same species. Since then, at the request of Andrus Voitk, Zheng Wang has kindly done genetic marker studies of the specimens that I examined. His analysis showed that the two populations differ enough genetically to be considered valid independent species. Jean Lodge, who has devoted years to the study of the *Hygrophorus* group of mushrooms, including *Hygrocybe*, kindly made her unpublished DNA data for North American *H. nitida* available for comparison. Wang's phylogenetic analysis showed that the Newfoundland and Québec collections match collections of *H. nitida* from continental North America with 100% statistic support. Presumably the European and North American species

share a common ancestor. They have been split and isolated from each other for such a long time that sufficient genetic differences have accumulated to make them different genetic species. Morphological changes were not significant enough (at least yet) to tell them from each other, but the North American *H. nitida* (photo, previous page) is a sister species to the European *H. vitellina* (phylogeny diagram, next page).



### **Conclusions**

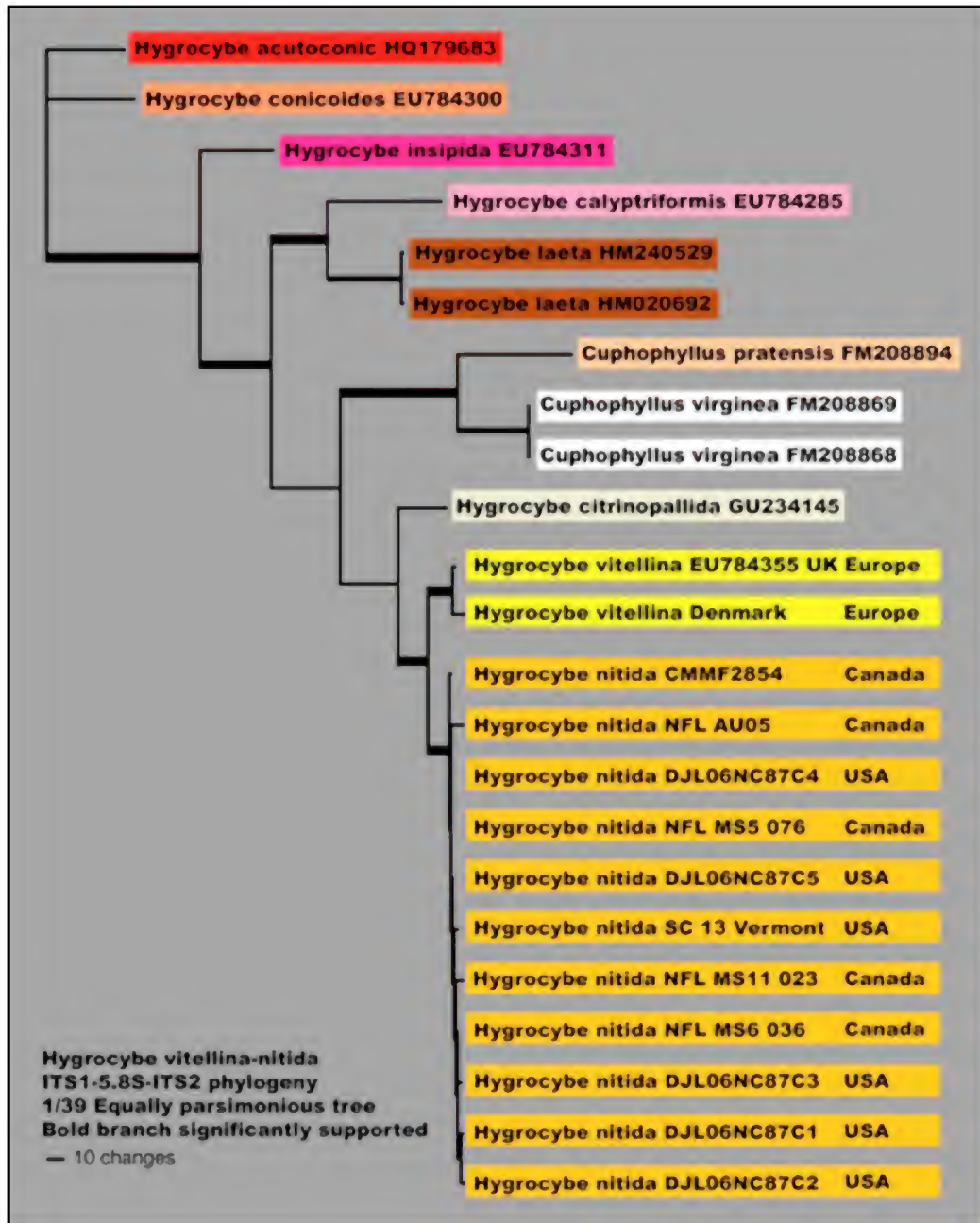
1. The correct name for the North American taxon, including studied collections from Newfoundland and Québec, is *Hygrocybe nitida*, the name given it by Berkeley & Curtis in 1916.
2. The correct name for the European species remains *Hygrocybe vitellina*.

### **Acknowledgments**

I thank Zheng Wang for doing the genetic marker studies on this material and the analyses of his and Lodge's unpublished data, to develop the phylogeny in Figure 1; Jean Lodge, USDA Forest Service and Karen Hughes for making their unpublished data available for this analysis; Renée Lebeuf and the Cercle des Mycologues de Montréal, as well as Andrus Voitk and Foray Newfoundland & Labrador, for making available collections for the above analyses.

### **References**

1. Boertmann D: The identity of *Hygrocybe vitellina* and related species. Nord J Bot. 10:311-317. 1990.
2. Boertmann D: Relationship of *Hygrocybe vitellina* and *H. nitida*—preliminary report. Omphalina II(7):
3. Berkley MJ, Curtis MA: Centuries of North American Fungi. Ann. mag. nat. hist. II: 417-435. 1916.
- 4-5. <<http://www.nlmushrooms.ca/>>. Last accessed 4 Jan., 2012. 2011



The phylogeny diagram kindly provided by Zheng Wang from his unpublished material and from unpublished data kindly supplied by Jean Lodge. Note that the European *H. vitellina* (one from the United Kingdom and one from Denmark) grouped together as a species. These are some of the specimens studied for my earlier report. The North American material that I studied for the same report (marked “Canada”) separated genetically along another arm as another species. The first of these comes from Québec and the others from Newfoundland. Statistical comparison of the ITS1-5.8S0-ITS2 marker phylogeny of these collections with those of *H. nitida* from elsewhere in North America (marked “USA”) sequenced by Jean Lodge and Karen Hughes, showed a 100% match. This means that the correct name for the Newfoundland taxon is *H. nitida*, and this is the only such morphologic taxon throughout at least north-eastern North America.



## Fun with Fungi: The Edible School Yard

By Elena Garcia | Posted May 23, 2012 (<http://edibleschoolyard.org/esy-berkeley-journal/2012/05/23/fun-fungi>)

Often during the rainy months, students enter the Ramada in the garden and as they look down to sit on the straw bale, blurt out in a concerned tone, “Oh my gosh! What is this growing out of the straw bales?” What they are looking at are small mushrooms growing out from the densely packed straw. Despite the prevalence of fungi in the garden and throughout the Bay Area, many students do not entirely know what a mushroom is. So the garden staff has developed a mushroom lab that every sixth grader experiences during a garden class in the rainy season.

In this lab, students learn that a mushroom is actually the reproductive organ of a fungus and is analogous to a fruit in the plant world; however, mushrooms, unlike fruit, carry spores rather than seeds. As students observe the life cycle of a fungus, they are able to recognize that every time we crack the compost pile open we see the early stages of fungus, in the form of a fungal web. Sixth graders also learn that although fungi in the compost pile are doing the work of decomposing organic material, there is actually an additional category of fungi called tree companions, which are not decomposers.

For most students, even those that already carry a wealth of information about mushrooms, this second category of mushrooms – the ones that are symbiotic with trees – is new information. Tree companion mushrooms have a mutual relationship with specific species of trees in which they benefit the tree by expanding the tree’s root network in exchange for sugars obtained from the tree’s cells. Students learn that unlike plants, fungi cannot produce their own food and are thus more similar to humans in that they are consumers - shocking!

As students learn more about how mushrooms are beneficial to the health and integrity of ecosystems and occupy their own kingdom in the tree of life, the “eww” factor subsides. By the end of the lab, students are able to touch and examine different examples of edible mushrooms. This year we were able to collaborate with the innovative organization Back to the Roots, who provided several oyster mushroom kits, in which the mushrooms grow on recycled coffee grounds. The kits were a great way for students to see up close examples of oyster mushrooms emerging from decomposing material, and the lab itself was a great way for students to learn more about the important role fungi play in the garden ecosystem.

*(The Edible School Yard was founded by Alice Waters. It is located in Berkley, California).*



## Ophelia Barizo, a Member of the NAMA Education Committee, wins PASCO STEM Educator Award and Regional Shell Science Lab Challenge

Ophelia Barizo, science department chairperson and teacher at Highland View Academy was recently awarded the 2012 PASCO STEM (Science, Technology, Engineering, and Mathematics) Educator Award in the high school level at an awards gala during the NSTA (National Science Teachers Association) national conference held in Indianapolis, Indiana from March 29-April 1. The award recognizes excellence and innovation in the field of STEM education. The award is sponsored by PASCO, a company that develops “technology-based solutions for hands-on science,” and has been serving schools in more than 100 countries around the world. NSTA is the largest professional organization in the world promoting excellence and innovation in science teaching. It has a membership of “approximately 60,000 science teachers, science supervisors, administrators, scientists, business and industry representatives, and others involved in science education.”



*Ophelia Barizo*

She was awarded a check for \$1,000; \$2,000 in PASCO products for her school; and, \$1,500 toward expenses to attend the NSTA National Conference. She also did a presentation at NSTA on STEM strategies in her classroom. Barizo has also won the Shell Science Lab Challenge for Region 3, which includes the states of Washington DC, Maryland, and Delaware. The award comes with a \$3,000 prize which will be used to upgrade science laboratory facilities of the school.

Barizo has implemented various technology-infused STEM activities in her classroom. For example, she has partnered with two Bay-related organizations and has gained funding for field trips and equipment for water monitoring. Her students do hands-on and interactive activities outdoors and use sensing equipment to test Bay water quality. She also provides her students with project-based science education that incorporates hands-on learning, scientific inquiry, and critical thinking skills.

Her numerous awards and honors include the DCAT “Making a Difference” Award from the NSTA and the Drug, Chemical, and Associated Technologies Association in 2010, a Toyota Tapestry Grant for Teachers in 2009; an Environmental Award from the Highland View Academy’s Alumni Association; Washington County Private School Teacher of the Year in 2005; and being named Outstanding Educator of the Year for 2008-2009 by the Columbia Union Conference. In addition, she has been awarded over \$750,000 in grant funds from various foundations for innovative classroom projects and technology.

### ***How Did You First Become Interested in Fungi?***

*Taking a cue from our NAMA webmaster, David Rust, I would like to invite NAMA members to send me your stories about how, when and with whom you became interested in fungi. I would like to include them in future issues of **The Mycophile**. Please send them to me at [diannasmith@optonline](mailto:diannasmith@optonline).*

## Award for Contributions to Amateur Mycology

NAMA's *Award for Contributions to Amateur Mycology* is given annually to recognize a person who has contributed extraordinarily to the advancement of amateur mycology. Its recipients have often extensively conducted workshops, led forays, written or lectured widely about mushrooms and identifying mushrooms, all on a national or international level. Selection is made by a committee consisting of past award winners, and the award includes a plaque and lifetime membership in NAMA.

Nominations for this award be submitted no later than September 1 to Gary Lincoff at the address given below.\* They should include a description of the accomplishments the nominee has made in the field of amateur mycology. Previous nominees who were not selected to receive the award are still eligible for re-nomination.

## The Harry and Elsie Knighton Service Award

The *Harry and Elsie Knighton Service Award* was established by the NAMA Board of Trustees to recognize and encourage persons who have distinguished themselves in service to their local clubs. It is named for the Knightons, whose efforts began the North American Mycological Association in 1967.

The annual award consists of a framed certificate; publicity for the winner and club in *The Mycophile*; a one-year membership in the organization; and registration, housing and foray fees for the next NAMA Foray. Each year's recipient is selected by the three most recent recipients of the Award.

Every NAMA-affiliated mycological club may nominate one candidate whom it feels has performed meritorious service during the current or preceding year. The Knighton Service Award has been given every year but one since 1989.

Four copies of the nomination and supporting material must be sent by September 1\* of this year to:

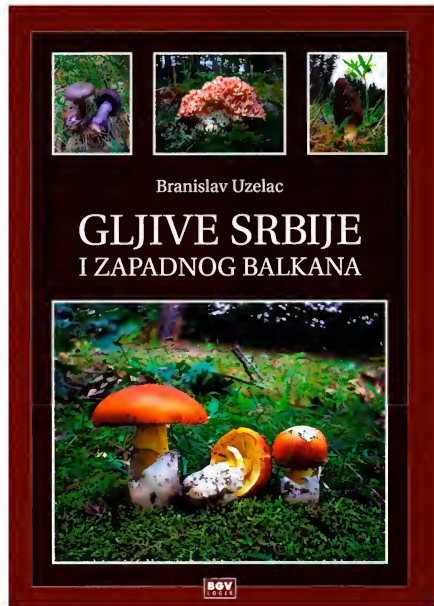
**Gary Lincoff**

NAMA Awards Committee Chairman  
The New York Botanical Garden Education  
200th Street and Kazimiroff Boulevard  
Bronx, NY 10458-5126

*\*(Because the NAMA Foray is in December this year, **the date for submissions of both awards has been changed to September 1.** Hereafter, the date will be April 1 of the year in which the award is given unless there is another year-end foray).*

## BOOK REVIEWS

### *Gljive Srbije i Zapadnog Balkana (Fungi of Serbia and the Western Balkans)*



Branislav Uzelac  
2009 / 464 pages  
BGV Logic  
ISBN 978-86-912677-0-4 (hardback)  
Available from NHBS  
<http://www.nhbs.com/>  
£120 (\$188 as of mid June 2012)

So, you thought pronouncing the scientific names of mushrooms was difficult? They'll seem like child's play after having a go at Serbian. For instance, according to a Serb friend, the main part of the title can be roughly approximated as GLEE'VAY SUR'BEEYAY, but with the "L" changed to Spanish "LL" or (better) the Italian "GLI." He also recommended having a beer before attempting that sort of "Y" sound after a "GL."

Although this treatment of a large number of species from the Balkans region has been available for a few years, it is little known in North America. The author and principal photographer, Branislav Uzelac, is not a professional mycologist but rather a regionally well-known naturalist,

television personality, and writer who has developed a passion for fungi. He is the founder and president of the Mycologists' Association of Serbia, the group responsible for publication of the book. Interestingly, the foreword was written (in English) by Harvard mycologist, Anne Pringle.

The format of the book is very similar to that of Michael Jordan's *The Encyclopedia of Fungi of Britain and Europe*. Thus, it is large—8.5 × 11.5 inches (21.5 × 30.5 cm)—and thus suited for use in the home rather than the field. Overall it is attractive and the binding and production quality are high. Introductory materials occupy the first 26 pages—explanations of what fungi are, how they relate to other organisms, aspects of their biology and ecology, how they are classified, the diversity of macrofungi, uses of fungi for food and medicine, and the main types of mushroom poisoning. There are no keys in the usual sense. Rather, following the introduction, there is a series of 22 montages representing major morphotypes and, within the gilled morphotype, different families, each accompanied by brief comments. Although such an approach is quite amenable for use with the major morphotypes, I'm not sure it works as well when attempting to determine to which family a gilled mushroom belongs, at least for those without a lot of experience. Next comes the approximately 1200 illustrated species descriptions. A short glossary, indexes to scientific and Serbian colloquial names (the latter far shorter than the former), and literature references complete the book.

The main part of the volume is the species descriptions, which are divided into those belonging to the Ascomycota and the Basidiomycota. Within each of those groups, the species are organized following a taxonomic scheme and listed by scientific name, including author. The Serbian common name is given if the species has one (most don't), and a common synonym is given when appropriate. Each description includes a summary of macroscopic features, key microscopic features, ecological occurrence, and edibility. Some include very brief comments. The descriptions come three-to-the-page, placed one

above the other adjacent to the inner edge, and each is accompanied by an adjacent photo toward the outer edge. The photos are of good size (3 × 3.5 inches / 7.5 × 9 cm) and vary in quality from excellent to substandard. On the whole, I would rate most as quite adequate for identification purposes. The poorer ones often are of a single specimen, shown from too-great distance, and in which key ID features are not visible. I suspect the inclusion of such images stems from the attempt to show as many species as possible and the fact that it is difficult to find a good-quality photo, from a specific area, for each and every species of mushroom that lives there.

The species include many commonly illustrated ones, such as *Amanita muscaria*, *Boletus edulis*, and *Hypholoma fasciculare*, but also a number of others that are encountered much less often in popular guides. The large number of species included from what is a fairly small region allows the book to provide a closer-to-complete picture of its macrofungi than is the case with most mushroom guides and this perhaps is its strongest feature.

Sales of the book benefit the Mycologists' Association of Serbia, particularly their ongoing effort to produce an enlarged (~1500 species?) English-language version, and helping overseas mycologists certainly is in keeping with NAMA's origins as a people-to-people organization. However, it seems to me a tough sell to get North American mushroomers to pony up over \$200 (with shipping) for a book that most cannot read in order that eventually they will be able to buy a version that they *can* read. For comparison, the very similar Jordan book, albeit shorter at 384 pages and just over 1000 species, was only \$65 when it came out in late 2004. The problem is also exacerbated by the choice of NHBS as the outlet for the book as its prices virtually always are higher than those of other sources, often by a wide margin. If you can afford it, *Gljive Srbije* will provide you with many hours' enjoyment getting acquainted with the mushrooms from another part of the world and provide the satisfaction of knowing you contributed to a worthy cause. If you can't afford the book, perhaps consider making a donation to the Mycologists' Association (contact them at [english@gljivari.org.rs](mailto:english@gljivari.org.rs)) to support the work of our fellow Serb mycologists and help make that English version a reality.

Steve Trudell

BASIDIOMYCOTA AGARICALES



***Amanita virosa*** (Lamarck) Bertillon  
UŠILJENA PUPAVKA

**Podno telo:** šesir do 10 cm, kupast pa zvonoliko raširen, po pravilu asimetričan, glatke i sjajne površine, bele do svetle krem boje. Listići su veoma gusti, beli. Drška je veličine do 15x1,5 cm, sa bulbom u osnovi, celom dužinom je križušasto vlaknasta. Prsten je visoko postavljen, tanak, beo; volva vrečasta i bela.

**Mikroskopija:** spore okruglaste, amiloidne, 8-11 µm, u masi beličaste boje.

**Meso:** tanko, belo, bez osobitog mirisa i ukusa, kod starijih primeraka se oseća neprijatan miris.

**Hemijske reakcije:** meso sa kalijumhidroksidom reaguje žutonarandžasto.

**Stanište:** plodi tokom leta i jeseni pod četinarima, rede ispod listopadnog drveća, na kiselim terenima. Retka vrsta.

**Jestivost:** smrtno otrovna!



***Limacella illinita*** (Fr. Fr.) Murrill

**Podno telo:** šesir do 8 cm, prvo kupast do zvonolik, kasnije raširen, sluzav, beličaste do krem, pa čak i oker boje. Listići nisu mnogo gusti, slobodni su i beli. Drška je veličine do 10x0,8 cm, beličasta, ispod zone prstena je sluzava.

**Mikroskopija:** spore široko eliptične do okruglaste, deksstrinoidne, neamiloidne, gotovo potpuno glatke, 4-5x3,5-4 µm, u masi beličaste boje.

**Meso:** krhko, beličasto, blagoe, prijatnog mirisa.

**Stanište:** termofilna vrsta; plodi najčešće ispod četinara.

**Jestivost:** jestiva.

**Komentar:** srodna vrsta, *L. guttata* (Pers. : Fr.) Konrad & Maublanc, krupnija je, tamnije obojena i ima krupan membranozan prsten.



***Limacella gloderma*** (Fr.) Maire

**Podno telo:** šesir do 6 cm, isprva zaobljen, pa raširen i ispušćen u sredini, lepiljiv i pomalo sluzav, u nijansama kestenjaste i narandžaste boje. Listići su gotovo slobodni, duboki, beličasti. Drška do 10x1,5 cm, beličasta, ispod zone prolaznog prstena pomalo sluzava, pokrivena je vlaknastim fragmentima u nijansama šešira.

**Mikroskopija:** spore okruglaste, glatke, neamiloidne, 4-5,5 µm.

**Meso:** beličasto, snažnog mirisa koji podseća na brašno ili krastavac.

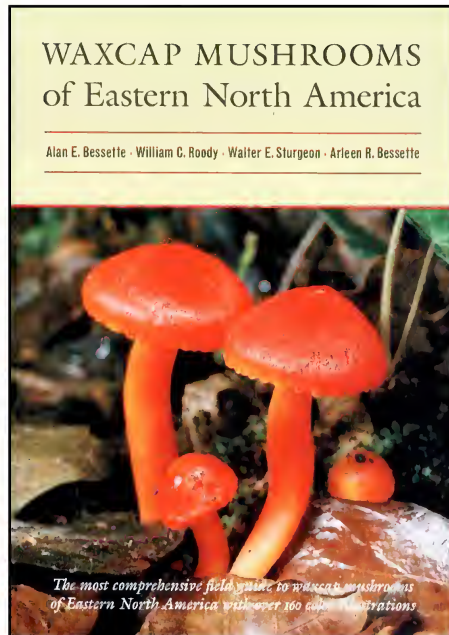
**Stanište:** plodi po šumama i parkovima, na vlažnim terenima bogalim azotom. Retka vrsta.

**Jestivost:** jestiva.

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# WAXCAP MUSHROOMS OF EASTERN NORTH AMERICA

by John Plischke



For some time our family has had Harry Knighton's copy of North American Species of Hygrophorus by L. R. Hesler and Alexander H. Smith. Although it was published in 1963, it was the only book we took off the shelf when we wanted to look up any Hygrophorus. It is the book we had always considered the ultimate guide to Hygrophorus. However, most of the photos were small and all of them are in black and white except for the cover. For as good as this book was, it needed to be updated.

Now, there is a new Hygrophorus book in town, Waxcaps of Eastern North America. The authors are Alan E. Bessette, William C. Roody, Walter E. Sturgeon, and Arleen R. Bessette. This new book has something significantly different than Hesler and Smith's book. The book is chock full of excellent color photographs. There are a total of 167 color photographs, almost all being half page or larger in size.

Besides the authors, photographs were contributed by Renee LeBeuf, John Plischke III, David Lewis, David Largent, and Michael Wood or came from the collections of Orson Miller, Jr., Richard Homola, Dan Guravich, and Emily Johnson. These photographs are excellent and even I could, in most cases, match up the photo with the mushroom I found in the woods.

It has a nice glossary and section on Resources and Recommended Reading and an Index to both Common Name and Scientific Name. There is information about the authors, which was unnecessary to the NAMA crowd because they are familiar to most of us. The hardback book has 179 pages. It is 7 1/8 inches by 10 3/8 and 3/4 inch thick. There is a nice introduction which among other things gives you a brief recap of the history of Hygrophorus in the US. Although there are more hand drawings of microscopic features in the Hesler & Smith book, they are discussed in this book. There are no keys in this book. The background information, although somewhat brief gives the new student of waxcaps a good background. This book is easy to read and easy to use. Well over a hundred species of waxcaps are described and they have even included a couple species of undescribed waxcaps.

A balance was achieved on whether to use an older name, a newer name or the very latest name. I think the descriptions are very well done and I have included their description of *Hygrocybe laeta* var. *laeta* so you can form your own opinion.

As a field guide for the Hygrophoraceae, I think Waxcaps of Eastern North America sets a new standard. I plan to keep my Hesler & Smith book, but this is now my “go to” book when I need to look up a waxcap mushroom. I highly recommend you purchase Waxcaps of Eastern North America for your library.

The book can be purchased from Syracuse University Press for \$95. ISBN 978-0-8156-3268-9. At the time of this writing at Amazon the price ranges from \$60 to \$125.

In addition to **NAMA** and your local clubs, please support **MUSHROOM THE JOURNAL** [www.mushroomthejournal.com/](http://www.mushroomthejournal.com/) and **FUNGI Magazine** [www.fungimag.com/](http://www.fungimag.com/)

### **NAMA Member Survey**

You’ve probably heard by now that the Marketing Committee is conducting a multi-level survey to ask members like you how NAMA can serve you better. We’re asking how often you attend forays, how often you visit the website, membership costs, and preferences about our publications *The Mycophile* and *Mcllvainea*. Thank you for your responses. We hope to translate them into a new direction and better services for members.

### **NAMA Cultivation Links**

Cultivation Committee Chair Ron Spinosa has just updated several links and added new ones to the cultivation links page: <http://namyco.org/cultivation/links.html>. If you’re interested in cultivation, join the forum at: [http://tech.groups.yahoo.com/group/NAMA\\_mushroom\\_cultivation/join](http://tech.groups.yahoo.com/group/NAMA_mushroom_cultivation/join).

### **NAMA Education Programs**

Want to learn more about the medicinal qualities of mushrooms? Need suggestions for speakers for your club programs? Want some ready to run programs? Check the education section of the NAMA website at: <http://namyco.org/education/index.html>.

### **NAMA Member Discussion Group**

Did you know there’s a discussion group just for NAMA members? With over 200 members and growing quickly, this forum is the place to learn about NAMA activities and events, and news from the world of mycology. Join today, at: [http://tech.groups.yahoo.com/group/na\\_mycological\\_association/](http://tech.groups.yahoo.com/group/na_mycological_association/).

# DOCUMENTARY DIVISION OF 2011 NAMA PHOTO CONTEST



**First place:** *Agaricus praeclaresquamosus*,  
by Christian Schwarz



**Second place:** *Hygrocybe psittacina*,  
by Erin Page Blanchard



**Third place:** *Mycena aurantiomarginata*,



**Honorable mention:** *Polyporus radicans*,  
by Charles Fonaas

## Join and Renew Membership Online

Response to NAMA's online dues renewal page has been strong. Partnering with PayPal, we have made it easier for you to join and renew your dues without having to write a check or purchase a postage stamp. Please be sure to include your telephone number in the process. If you have questions, please contact Membership Secretary Ann Bornstein at [annstitcher@charter.net](mailto:annstitcher@charter.net).

North American Mycological Association  
c/o Ann Bornstein  
61 Devon Court  
Watsonville, CA 95076

*Address Service Requested*

Neweletter of the North American Mycological Association  
**THE MYCOPHILE**



**MUSHROOM OF THE ISSUE**  
Courtesy of Erin Page Blanchard

*Tubaria punicea* is not a rare mushroom, but unless you make a point of looking for it in the right habitat during mushroom season you are not likely to spot this striking but small species. So when you are in California for the 2012 NAMA foray admiring the exquisite bark of the Madrone trees (*Arbutus menziesii*), take a moment to check the base of the larger Madrones, especially around any wounds or decorticated areas. It should be noted that the vinaceous color of this species camouflages remarkably well against the equally red, shiny bark of its host Madrones. This is the exception to the rule of "Tedious" little brown Tubaria!